Generic Route Optimization Model for NEMO Extended Support

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Generic RO Model

- Route Optimization Problem
  - Efficient routing for the mobile nodes and nested mobile router
  - End-to-end solution vs. Network solution
- Purpose of the Generic RO Model
  - To provide the RO solution space
  - To evaluate existing RO models
- RO Problems in Mobile Networks
  - RO in the infrastructure
  - Nested Tunnels Optimization (NTO)
- Generic RO Model
  - Generic Route Optimization Tunnel Model

Route Optimization Tunnel Model

- Generic Route Optimization Tunnel (ROT) Model

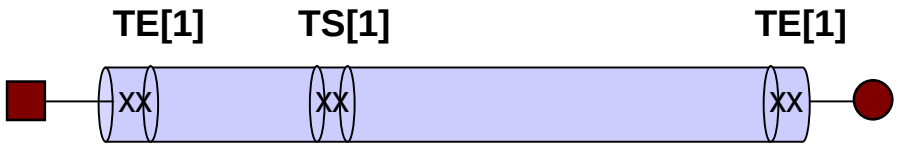
TE: Tunnel Endpoint

TS: Tunnel Switch

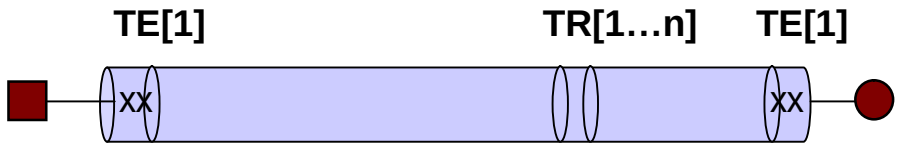
TR: Tunnel Relay

XX: Tunnel Encap./Decap.

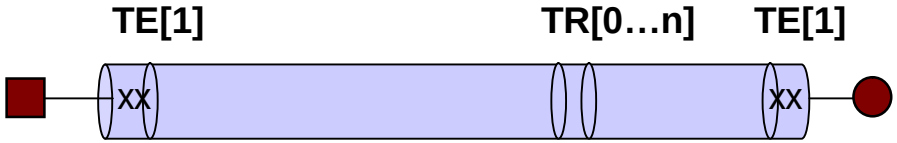
- RO in the Infrastructure



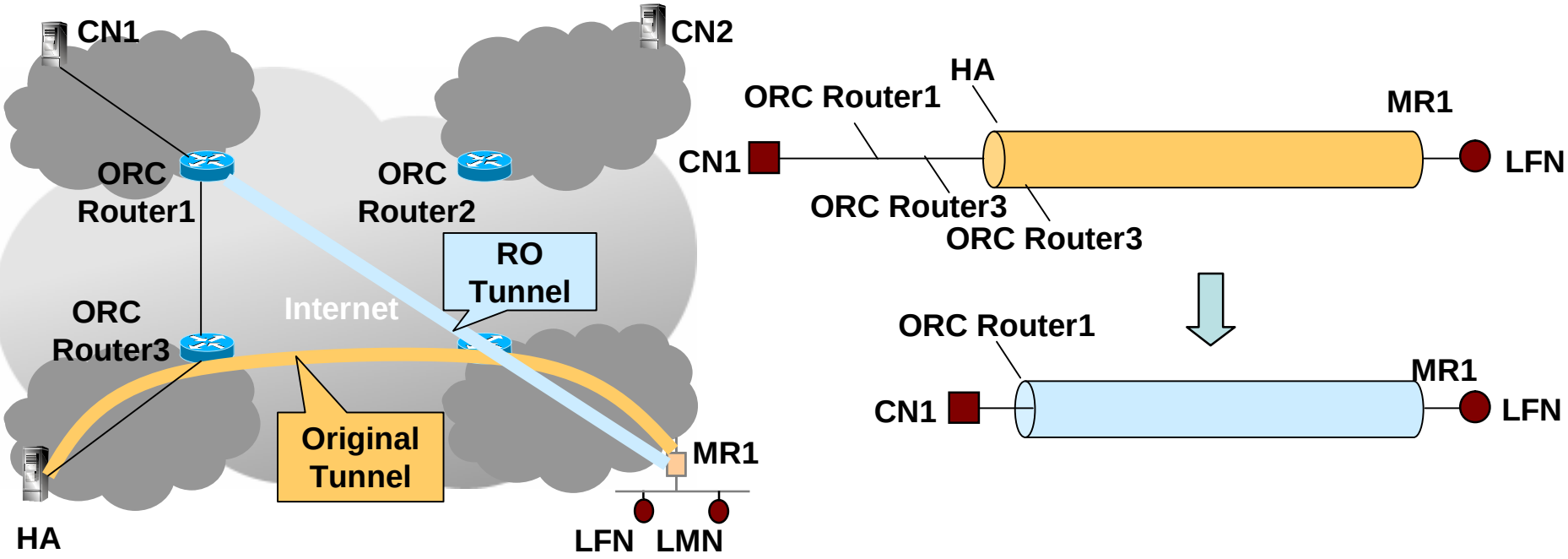
- Nested Tunnel Optimization



- Unified RO Solution



RO in the Infrastructure



CN: Correspondent Node

HA: Home Agent

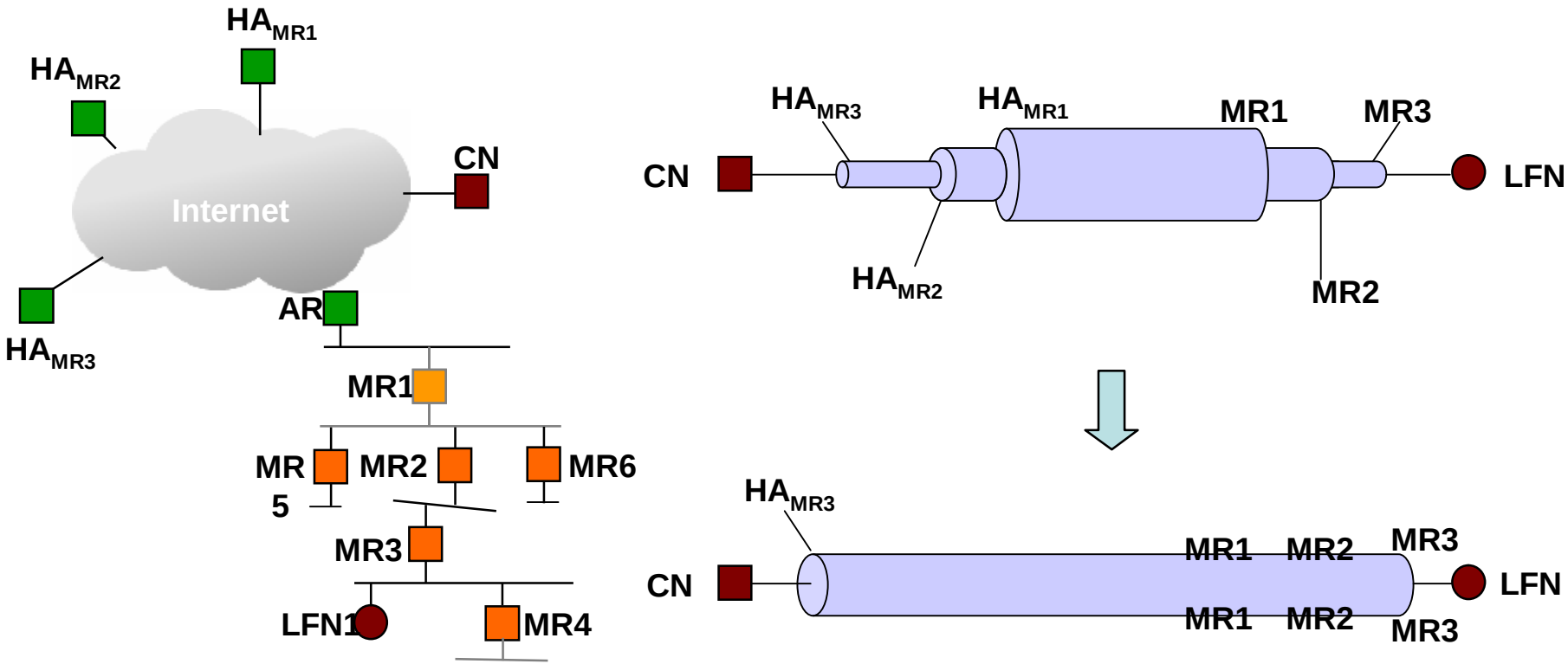
ORC: Optimized Route Cache

MR: Mobile Router

LFN: Local Fixed Node

LMN: Local Mobile Node

Nested Tunnel Optimization (NTO)



Toward an Unified RO in NEMO

- Mechanisms for RO in the infrastructure
  - → Can be applied to both MIP and NEMO
  - VIP (Virtual Internet Protocol)
  - ORC (Optimized Route Cache) Management Protocol
- Mechanisms for Nested Tunnel Optimization
  - → NEMO-specific RO Problem
  - RRH (Reverse Routing Header)
  - ARO (Access Router Option)
- Unified RO Solution
  - → Provide generic solution for NEMO
  - PCH (Path Control Header)-based RO